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PROCEEDINGS

OF THE

BOARD OF EXPERTS


AUTHORIZED BY CONGRESS,

TO INVESTIGATE

THE YELLOW FEVER EPIDEMIC

OF

1878.



MEETING HELD IN MEMPHIS, TENN.,

December 26th, 27th, 28th, 1878.

NEW ORLEANS:

L. Graham, Printer, No. 127 Gravier Street,
1878.

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LIST OF EXPERTS

APPOINTED BY THE JOINT COMMITTEES OF THE SENATE AND
HOUSE OF REPRESENTATIVES ON EPIDEMIC DISEASES,
DECEMBER 18th, 1878.

DR. J. M. WOODWORTH, Washington, D. C.,
DR. S. M. BEMISS, New Orleans, La.,
DR. JEROME COCHRAN, Mobile, Ala.,
DR. WM. SELDEN, Norfolk. Va., [unable to serve in the field]
DR. SAM'L A. GREEN, Boston, Mass.,
DR. W. H. RANDLE, Philadelphia, Penn.,
DR. JACOB S. MOSHER, Albany, N. Y.,
DR. M. S. CRAFT, Jackson, Miss.,
DR. W. H. MUSSEY, Cincinnati, Ohio, [declined]
DR. R. W. MITCHELL, Memphis, Tenn.,
DR. L. A. FALLIGANT, Savannah, Georgia,
DR. STANFORD E. CHAILLÉ, New Orleans, La.,
MR. THOS. S. HARDEE, Sanitary Engineer, New Orleans, La.

True copy :

JAMES C. SAUNDERS,
Clerk House Committee.

DR. R. M. SWEARINGEN, Austin, Texas. [Appointed an
Expert, Dec. 23d, 1878.]

The following letter was addressed to each one of the
Experts: *

DEAR SIR:

I am authorized by the Committees of the Senate and
House of Representatives on Epidemic Diseases to advise you
that you have been elected a member of the Yellow Fever
Commission of Experts, with compensation at the rate of "ten
dollars per day and actual expenses while on duty."

Your are respectfully requested to attend a meeeting of the
Commission to be held in the city of Memphis, Tennessee, on
Thursday morning the 26th instant.

Very respectfully,

JOHN M. WOODWORTH.

WASHINGTON CITY, Dec. 19th, 1878.

* Notification by telegraph was also addressed to the Experts on the day of their
appointment.

The first meeting of the Congressional "Board of Experts on Yellow Fever and Cholera," organized at 3, P. M., at the Peabody Hotel, Memphis, Tennessee, December 26th, 1878.
Present :

1. Dr. Bemiss, New Orleans, La.
2. Dr. Chaillé, New Orleans, La.
3. Dr. Cochran, Mobile, Ala.
4. Dr. Craft, Jackson, Miss.
5. Dr. Falligant, Savannah, Ga. *Hammehall*
6. Dr. Green, Boston, Mass.
7. Mr. Hardee, Engineer, New Orleans.
8. Dr. Mitchell, Memphis, Tenn.
9. Dr. Mosher, Albany, N. Y.
10. Dr. Randle, Philadelphia, Pa.
11. Dr. Swearingen, Austin, Texas.
12. Dr. Woodworth, Washington, D. C.

Dr. Woodworth, on taking the chair, read the following two official documents, viz :

[No. 1.]

" House of Representatives,

Washington, D. C.

In joint session of the Committee of the Senate and House of Representatives, on Epidemic Diseases, held in the room of the House Committee on Public Buildings and Grounds, December 18th, 1878,

On motion of Hon. John Goode, Dr. J. M. Woodworth, Surgeon General United States Marine Hospital Service, was made ex-officio President of the Board of Experts, selected by the committee.

A true copy.

JAMES C. SAUNDERS,

Clerk House Committee."

[No. 2.]

*“ House of Representatives,
Washington, D. C.*

In joint session of the Committee of the Senate and House of Representatives, on Epidemic Diseases, held in the room of the House Committee on Public Buildings and Grounds, December 18th, 1878, Hon. Stanley Matthews offered the following resolution, which was adopted by the committee :

“ That the compensation of experts be \$10 per day, and actual expenses while on duty.

A true copy.

JAMES C. SAUNDERS,
Clerk House Committee.”

Dr. Chaillé was elected Secretary of the “ Board of Experts.”
On motion of Dr. Bemiss, it was

[No. 3,]

“ *Resolved*, That a committee of three be appointed by the President, to devise a plan and mode of work, for the investigation of the yellow fever epidemic of 1878, to report at 7½, P. M.”

And it was further resolved that the President of the Board be added to this committee.

Board adjourned at 3½, P. M., to meet at 7½, P. M.

The Board met pursuant to adjournment, at 7½, P. M., all of the twelve members being present.

The President announced the appointment of Drs. Cochran, Mosher, and Craft on the Committee required by a previous resolution. See [No. 3].

The following communication was then read :

[No. 4.]

MEMPHIS, TENN., December 26, 1878.

Dr. John M. Woodworth, Surgeon General, having by resolution of the joint committee of the Senate and House of Representatives (appointed to investigate the causes and method of preventing Yellow Fever and Cholera) been constituted President *ex-officio* of the Board of Experts provided for by reso-

lution of Congress, he will proceed to organize the same and direct them to investigate the following points of inquiry, viz:

(a.)

1st. The origin, cause, and distinctive features of Yellow Fever and Cholera; whether or not they are indigenous to any part of the United States; if not, how they are brought to this country, and the localities from which they come, and if found to be indigenous and also imported, in what proportion and to what extent has their presence in the United States been owing to importation.

[b.]

2dly. The season of the year and atmospheric conditions, when and in which they may be propagated.

[c.]

3dly. The means to be adopted by which their introduction into this country from other localities may be prevented.

[d.]

4thly. The method of preventing its propagation and spread, when once introduced into any part of the United States.

[e.]

5thly. The number of deaths that have occurred in the United States during the present year; the expenditure and the injury to business resulting therefrom.

The foregoing is the order of the Committees in joint session, and the experts will confine themselves to it as nearly as possible.

ISHAM G. HARRIS,
Chairman Senate Committee.
STANLEY MATTHEWS,
Of Senate Sub-Committee.
CASEY YOUNG.
Chairman House Committee.

The following was then adopted:

[No. 5.]

Resolved, That the instructions of the Joint Committees of the Senate and the House of Representatives to the Board of Experts be placed on the minutes of the Board, and be properly acknowledged.

The following report from the Committee [See No. 3], embracing memorandum [No. 6] and resolutions [No. 7 and No. 8], was then submitted to the Board of Experts:

Your committee appointed to suggest a plan of operation for the Board of Experts on Yellow Fever, met and organized by electing Dr. Woodworth, Chairman—and Dr. M. S. Craft, Secretary.

The following memorandum in relation to the method of investigation adopted by the late Yellow Fever Commission together with suggestions for additional inquiries, was laid before the above mentioned Committee of Experts by Dr. Woodworth.

[No. 6.]

MEMORANDUM.

"The investigation of the Yellow Fever epidemic by the Commission under the direction of the Surgeon General of the Marine Hospital Service, was undertaken in response to a great public wish that the inquiry and study should be begun while the epidemic was yet in progress, and before the evidence specially valuable should become obliterated or obscured by time. Prof. Samuel M. Bemiss, M. D., of New Orleans, Jerome Cochran, M. D., of Mobile, and Prof. E. Lloyd Howard, M. D., of Baltimore, were appointed as Experts, and they commenced the investigation at New Orleans, October 1st. Subsequently there were added to the Commission Col. Thomas S. Hardee, of New Orleans, as Sanitary Engineer, Prof. Joseph G. Richardson, of Philadelphia, and Assistant Surgeon Robert White, of the Marine Hospital Service, as pathologists and microscopists.

Until quite recently four clerks were employed to compile statistics, etc.

The work has been pushed forward as rapidly as possible to the present time with the view of collecting, for the immediate use of Congress such facts as may have a bearing upon legislation.

To this end the investigation has been directed chiefly to the causes of the commencement and spread of the disease, the ultimate object being to establish truths upon which the theory

and practice of prevention of future epidemics may safely rest. The manner of proceeding has been to secure the coöperation of the practitioners of medicine and of public officials in each place visited by the Commission, and this coöperation has been everywhere willingly accorded. In Memphis alone, the City has expended about one thousand dollars in aiding the Commission's work.

Thirty-four of the infected cities and towns have already been visited, and all important conditions and circumstances bearing upon the epidemic, carefully studied, and the facts recorded.

Inquiry has been made into the circumstances attending the appearance of the first cases of Yellow Fever in each place, and the connection, if any, between the first cases and those subsequently developed.

This line of inquiry has been pursued with reference to each case of fever which occurred up to the time when the disease became epidemic, or so prevalent in the place as to be no longer instructive. These inquiries have included the following questions among others:

1st. Did the first cases originate locally, or were they imported from other infected points?

2ndly. How was the contagious principle conveyed to the different points where the disease prevailed?

3rdly. What influence did persons, vessels, and railroad cars, baggage, clothing, or other matters have, in conveying the Yellow Fever poison, or in communicating the disease?

4thly. What quarantine measures were adopted by sea, river or land, in respect to persons, baggage, cargoes, etc.; when established, how enforced, violations, if any, and results?

5thly. What measures of disinfection were employed, when applied, how long continued, and the results?

6thly. What local influences affected the severity or duration of the disease? (Under this head have been studied and noted the sanitary conditions and topography of each place visited, the natural and artificial drainage, disposal of sewage, conditions of privy vaults, and source and character of water supply.)

7thly. What measures of individual prophylaxis were tried, and with what result ?

8thly. What modifications of the usual summer and autumnal diseases were observed during the epidemic of Yellow Fever ?

9thly. Were any unusual forms of disease observed among domestic animals, etc., preceding and during the epidemic ?

Maps have been prepared showing the location of each case of Yellow Fever which occurred, with distinctive marks for recoveries and deaths.

For New Orleans, five maps are being prepared, each one to exhibit an epoch of the epidemic.

No. 1. The outbreak, showing the cases which occurred in July.

No. 2. The July and August cases.

No. 3. The July, August and September cases.

No. 4. The July, August, September and October cases.

No. 5. The entire epidemic.

The study of the comparative history of the epidemic of 1878, with all other epidemics in the United States, has been begun, and tables are being prepared which will exhibit at once the leading features of all epidemics in this country.

These tables are intended to show the date of the first imported, or refugee cases, and of deaths. Date of first case and of first death among inhabitants; the date of occurrence of the maximum number of cases in one day, and said maximum number; date of last case, total cases, total deaths, total population, and number of persons who fled.

It is desirable that the part of the work described above should be completed for every city and town visited by the fever, so that the reports may be available for the Public Health Committee of Congress.

Some of the additional lines of inquiry which it seems desirable should be pursued, are as follows :

1st. A careful study should be made of the meteorological phenomena as far back as trustworthy data are available, and the relations between different atmospheric conditions and the prevalence or absence of disease carefully analyzed.

2ndly. The geological conditions, character of soil and amount

of water contained in it, at different seasons, the forms of vegetable growth, grasses, foliage and fruit; the cultivation of certain crops, and the existence of decaying vegetable matter in any form. All of these should be carefully studied with the view of ascertaining any influence which they may exert in producing or increasing epidemic diseases.

3rdly. Microscopical examinations of the blood of Yellow Fever patients have been made at the bedside. The viscera of Yellow Fever victims have also been subjected to microscopical examination, and specimens preserved for future observation. Microscopical and chemical examinations should be continued and directed to all available secretions and excretions, of men and animals during the prevalence and absence of epidemic disease, in order that a standard of comparison may be established for similar observations to be made when epidemic disease is prevailing. Chemical analysis of the air, water and soil, and microscopical examinations of the air, and of the water used for drinking purposes should be made at different seasons of the year.

4thly. The general effects of Yellow Fever upon the health of the people, following the epidemic, should be ascertained.

5thly. The expenditure of money and the injury to business resulting from the epidemic.

6thly. It is considered very important that experts should visit the West Indies and Mexico, to inquire into the causes which keep alive and propagate the Yellow Fever poison in those countries, especially in Havana, from which place it is usually imported into the United States.*

* The President stated to the Board that the plan proposed for completing the work contemplates two quarto volumes.

Volume I, to contain the history of the Epidemic, direct and comparative; the nature of the poison which produces yellow fever. Its objective study,—microscopical, experience of the senses (smell), etc.; its subjective study, modes of reproduction and development, duration of its activity, duration of vitality under all circumstances or conditions which are known to affect it; the prevention of epidemics by quarantine, by altering the conditions favorable to its development, or by giving popular advice in regard to medicines or hygiene which may be supposed to render people less liable to attack.

Volume II, to embrace the nature of yellow fever as a disease; the effects of the poison upon man (the morbid processes of the disease), incubation,

In reference to this memorandum, Dr. Cochran submitted from the Committee the following resolution which was adopted by the Board.

[No. 7.]

Resolved, That in order to carry out the instructions which have been prescribed by the "Joint Committees of the Senate and House of Representatives," for the government of the Board of Experts, in the investigation of the origin, cause, and distinctive features of Yellow Fever, we recommend that the plan of investigation heretofore pursued by the Yellow Fever Commission, which has been acting during the last three months, under the orders of the Surgeon General of the Marine Hospital Service, as reported in the memorandum submitted by said Surgeon General, together with the additional inquiries suggested in said memorandum, be adopted as a basis for the further investigation to be conducted by the Board of Experts.

Dr. Cochran also submitted from the committee the following resolution, which was adopted:

[No. 8.]

Resolved, That in order to obtain the materials for an adequate history of the recent epidemic of Yellow Fever, we recommend that the following places be visited by members of the Board of Experts: Milliken's Bend, Delta, Delhi, Helena, Lafourche region, Teche country, Lower Coast, Covington, Mandeville, Pearlinton, Bay St. Louis, Pass Christian, Biloxi, Ocean Springs, Cat Island, Mississippi City, Morgan City, Pilot Town, Dry Grove, Bolton, and Greenville, and that the following places already visited by the recent Yellow Fever Commission, during the progress of the epidemic, be re-visited by members of the Board of Experts, so as to provide the additional data needed for completing the record of the epidemic in said places—Canton, Vicksburg, Donaldsonville, Baton Rouge, Jackson, Plaquemine, Grenada, New Orleans, Memphis and Mobile.

connection between symptoms and morbid processes, and treatment.

The chapter on meteorological phenomena, would necessarily be embraced in the second volume, if the first volume is completed for early publication, as a satisfactory study of the data cannot be completed under six months or one year:

The following resolutions were offered by Dr. Craft, and adopted.

[No. 9.]

Resolved, That Col. Hardee, as the Sanitary Engineer of the Board of Experts, be assigned to the following special duties, viz :

To make a thorough examination of the principal towns which have been infected with Yellow Fever, so as to furnish by report a full description of the elevation, character of soil, climate, and other local surroundings affecting the general health of each place; that suitable maps be prepared by him delineating, as far as possible, not only the topographical features above described, but showing also the location of fever cases, with a view to preserving an historical record of the origin and spread of the epidemic at each one of the said places; that charts of mortuary statistics in profile be also prepared, and that the whole of said drawings be compiled with reference to their use for future publication as a part of the report of this Board.

[No. 10.]

Resolved, also, That the examinations be extended to such places as Natchez and other points which escaped the epidemic by a strict quarantine, or otherwise; and that in these sanitary investigations Col. Hardee be assisted by such medical experts as may be selected to accompany or co-operate with him for that purpose.

On motion of Dr. Cochran, it was—

[No. 11.]

Resolved, That in order to complete the investigations proposed, as speedily as possible, we recommend that the members of the Board of Experts be divided into Committees, consisting, say of two members for each Committee, and that the several places to be visited, be divided amongst these according to a schedule to be prepared after due consultation.

The following was also adopted :

[No. 12.]

Resolved, That the Joint Committees of the Senate and House of Representatives, be informed by the President of the Board

of Experts and Dr. Bemiss, that the Board has effected an organization in accordance with their instructions; and that in order to carry out the same, the Board of Experts have adopted the foregoing plan of operations, which is respectfully submitted.

On motion the Board adjourned subject to a call of the President.

Meeting at 11, A. M., Friday, December 27th, 1878, all of the twelve members of the Board being present.

Dr. Woodworth stated that officers of the United States Marine Hospital Service, have investigated the cases of yellow fever which occurred at Cairo, Hickman, Louisville, Gallipolis, St. Louis and Key West, and that the reports of the investigations will be available for the use of the Board of Experts.

By request of the President, Dr. Bemiss reported in reference to the conference had by Dr. Woodworth and himself with the Joint Congressional sub-Committees, in compliance with resolution (No. 12), directing that the plan for carrying out the investigations, be submitted to said Congressional Committees*, which general plan of action was approved by them, with the stipulation that the information for the use of the Congressional Committees on Epidemic Diseases, shall be submitted as soon after January the 15th, as possible.

[* The following is the letter to the committee accompanying the memorandum of the action of the Board :

[No. 13.]

To the Honorable Isham G. Harris, Chairman Senate Committee; the Honorable Stanley Matthews, of Senate Committee; and the Honorable Casey Young, Chairman of House Committee:

GENTLEMEN—We have the honor to submit to you, on behalf of the Board of Experts, the accompanying memorandum, showing the action of the Board in accordance with your instructions, together with resolutions adopted by the Board suggesting a general plan of operations by which the desired information may be obtained.

It is understood that the information in relation to cholera, is to be prepared from the facts recorded in the literature on that subject, inasmuch as there is no present opportunity to investigate cholera; and if this interpretation is correct, a committee will be charged with the preparation of such information in an available and convenient form.

We have the honor to be,

Very respectfully, etc.,

JOHN M. WOODWORTH,

President *ex-officio* of the Board of Experts.

S. M. BEMISS,

Member of Board of Experts.

Dr. Bemiss offered the following resolutions, which were submitted *seriatim* and adopted :

[No. 14.]

Resolved, That the following four committees be appointed by the President of the Board of Experts :

1st. A Committee on Reports and Publications, to consist of the President and Secretary, and three other members.

2ndly. A committee of five to report in regard to

“First. The origin, cause and distinctive features of Yellow Fever and Cholera, whether or not they are indigenous to any part of the United States. If not, how they are brought to this country, and the localities from which they come; and if found to be indigenous and also imported, in what proportion and to what extent has their presence in the United States been owing to importations.”

“Second. The season of the year and atmospheric conditions, when and in which they are propagated.”

Thirdly. A committee of five to report in regard to “1st, the means to be adopted by which the introduction into this country of Cholera and Yellow Fever from other localities may be prevented; and 2ndly, the method of preventing their propagation and spread when once introduced into any part of the United States.”

Fourthly. A committee of three to report in regard to the number of deaths that have occurred in the United States during the present year; the expenditure of money, and the injury to business resulting therefrom.

It was further resolved that the President should be an ex officio member of each of the last three committees.

On motion of Dr. Mitchell, it was

[No. 15.]

Resolved, That the investigations so far made by the previous Yellow Fever Commission, and other investigations instituted by Dr. John M. Woodworth, Surgeon General United States Marine Hospital Service, be received, and adopted as a part of

the work of this Board, and that the same be continued so as to embrace points not hitherto investigated.

It was also

[No. 16].

Resolved, That the President of this Board be requested to cause to be continued the microscopical investigations by Prof. Joseph G. Richardson and Robt. White, Assistant Surgeon United States Marine Hospital Service, upon pathological specimens from Yellow Fever subjects, and that the results of their observations be presented to this Board.

Col. Hardee moved, and it was

[No. 17.]

Resolved, That the President of this Board make application to the Congressional Committees for authority to employ such clerical assistance as may be deemed necessary to facilitate the work of the members and Committees of the Board, in the performance of their several duties.

Col. Hardee moved, and it was

[No. 18.]

Resolved, That instead of all of the members of the four Committees being required to visit the additional places enumerated in a previous resolution, the chairmen of the four Committees, on adjournment at Memphis, shall convene immediately in New Orleans, and there examine and take into consideration the papers and documents now on hand, for the purpose of drafting the required reports. And moreover that such additional investigations shall be conducted in New Orleans, as well as nearly as possible complete the work at that point, prior to the meeting of the Board of Experts at Washington, by the 15th of January.

The President was appointed a Committee to visit the Congressional Joint Committees, and to ascertain more definitely the latest date, when the Board of Experts will be required to report the results of its investigations into the five subjects of inquiry, ordered by the Joint Congressional Committees.

Dr. Chaillé moved, and it was—

[No. 19.]

Resolved, That Drs. Bemiss, Cochran, Mitchell, Mosher and Craft, be appointed a Committee to submit to the Board, not later than Saturday morning, a report upon the three following subjects.

1st. The construction and arrangement of a series of interrogations to be recommended to the the two Joint Congressional Sub-Committees, for their use in their examinations of professional witnesses.

2d. The same for non-professional witnesses.

3d. Instructions and questions for a blank form—devised for the purpose of guiding the Experts engaged in investigating the history etc. of Yellow Fever, at the different places where it occurred in 1878.

Adjourned at 1, P. M., to 7½, P. M

Friday, December 27, 1878.

The meeting of the Board was called to order at 8, P. M.

All the twelve members present, except Col. Hardee.

Dr. Bemiss presented the report of the Committee of five, appointed at this morning's session.

(1) Interrogatories suggested to the Joint Congressional Committees, to be propounded by them to professional witnesses; which were adopted.

(2) Interrogatories to non-professional witnesses; which were adopted.

(3) A "memerandum of points to be investigated by the members of the Board of Experts;" which was adopted.

The aforesaid interrogatories (1) (2) and memorandum (3), are as follows:

[No. 20.]

(1) Interrogatories suggested by the Board of Experts to be propounded by the Congressional Committee to such members of the medical profession as they may examine:

1. Are you a practitioner of medicine in this place, and if so, how long have you practiced here?

2. During what years have you had personal experience in Yellow Fever?

3. State any facts tending to prove that the Yellow Fever epidemic of 1878 originated in this place, giving the name, date and locality of any cases supposed to be of such origin, or indigenous.

(N. B.—A similar question as to other years prior to 1878.)

4. State any facts tending to prove that the epidemic of 1878 arose from importation, either by contact with persons or things, giving the names, dates, and localities of imported cases or fomites.

5. When and where, in your knowledge, did the first case occur in this place?

6. State the names, dates, locality, whether a visitor or resident; when and how the disease was contracted, and other particulars.

7. Was this case reported to the Board of Health?

8. What was the exact or approximate date of the first case which occurred under your own observation; and state name, residence, and other leading facts in the case?

9. State any evasions or violations of quarantine, whether of your own knowledge or by hearsay.

10. Was the quarantine efficiently administered?

11. What course was pursued by the Board of Health, other public officials or private individuals to arrest the spread of the epidemic, and with what results?

12. What circumstances or conditions appeared to you least or most favorable to the reproduction and propagation of Yellow Fever poison?

13. What distance from an infected house do you consider a healthy person safe from the disease?

14. State briefly any facts not called for, which have a general or special bearing on the origin and propagation of Yellow Fever in this place during 1878, and during years prior thereto.

[No. 21.]

(2) INTERROGATORIES TO BE PROPOUNDED TO NON-PROFESSIONAL WITNESSES.

1. State any facts tending to prove that cases of Yellow

Fever existed in . . . place, during 1878, prior to . . . date, giving name, date, locality, etc. ?

2. Do you know of any cases, or suspected cases of Yellow Fever prior to said date, on steam or other vessels, not reported either to quarantine officials or to the Board of Health ?

3. Do you know of any violations or evasions of quarantine by persons who had, or were suspected to have had Yellow Fever either at the time or afterwards ?

3. Do you know of any steam or other vessels being at this port, and communicating or apparently communicating Yellow Fever to other vessels adjoining or near to them ?

5. Do you know of any vessels arriving at this port which had had, or were suspected to have had Yellow Fever on board before arriving at this port ?

6. Do you know of any goods or merchandise, introduced by any mode of conveyance, arriving here from infected ports or places, and known or suspected to have communicated Yellow Fever to persons handling them ?

7. State any facts regarding the spread of Yellow Fever from one part of this city to another, by contact with persons, or things ?

8. What kind of goods or merchandise appear to be least, and what most dangerous, as vehicles for the transportation of Yellow Fever ?

9. Have bags of coffee, fruit, hides, coal, cotton bagging, mail matter, etc., been known to convey the poison ?

10. Mention any evasions or violations of quarantine known or reported to you, whether followed by Yellow Fever or not ?

11. State any facts not called for, which may have a general or special bearing on the origin and spread of Yellow Fever during 1878.

[No. 22.]

(3.) Memorandum of points to be investigated by the members of the Board of Experts.

To get the following statistical data :

Total number of population.

Number who left the place on the appearance of the fever, with the date of the exodus.

Number of whites remaining; Number of mulattoes remaining; Number of blacks remaining; Total number of cases; Number of white cases; Number of mulatto cases; Number of black cases; Total number of deaths; Number of white deaths; Number of mulatto deaths.

To get, if possible, a complete list of cases, with names, dates of attack, dates of death, color, sex, age, etc.

To get especially, a complete list of deaths, with names, dates, ages, colors, sex, etc.

To get the date of the first imported or refugee case, and death thereof. Date of first case and of first death among inhabitants, the date of occurrence of the maximum number of cases in one day, and said maximum number, date of last case, total deaths, total population, and number of persons who fled.

To get the number of cases occurring among refugees in the adjacent country, with number of deaths, etc.

To get the number of cases occurring amongst returned refugees, with names, dates, attendant circumstances, etc.

To get a list of all the earlier cases, with names, dates, etc., together with all the facts connected with them, tending in any way to account for their occurrence, and particularly in relation to infection.

To get the date and attendant circumstances of the last case.

To get the date of occurrence of the maximum number of cases, and of the maximum number of deaths.

To trace the probable influence of the first cases in the production of subsequent cases.

To get the data for geographical and topographical description.

To ascertain the local sanitary conditions in relation to drainage, markets, ponds, water supply, privies, etc,

To ascertain the influence of malarial surroundings on the introduction, dissemination, and mortality of the fever.

To get such meteorological data as are accessible, together with the influence of winds and weather in the dissemination of the fever, and on its mortality.

To get all the facts connected with quarantine, its character, efficiency, violations, and protective value.

To get all the facts in relation to the practice of disinfection, and its value.

To collect such other illustrative facts, not specially mentioned in this memorandum, as may come in the way.

The following was adopted:

[No. 23.]

Resolved, That the Joint Congressional Committee be requested to give authority to publish the proceedings of the Board of Experts for the guidance of its members.

The membership of the four Committees [see No 14] to report to the Board of Experts, at its meeting in Washington on January 15th, upon the subjects designated by the Joint Congressional Committees for investigation, etc., was announced by the President as follows, viz:

[No. 24.]

Committee on Reports and Publications—The President of the Board; the Secretary of the Board; Dr. Bemiss, Dr. Cochran, Dr. Green.

[No. 25.]

Committee on the Origin, Cause, and Distinctive Features of Yellow Fever and Cholera, etc.—Dr. Cochran, Dr. Craft, Dr. Falligant, Dr. Swearingen, Dr. Mosher.

[No. 26.]

Committee on the Means to be Adopted by which the Introduction and Spread of Yellow Fever and Cholera May be Prevented, etc.—Dr. Bemiss, Dr. Mitchell, Dr. Mosher, Dr. Randle, Dr. Craft.

[No. 27.]

Committee on Deaths, Expenditure of Money, and Injury to Business—Dr. Green, Col. Hardee, Dr. Randle.

The President of the Board of Experts was made a member *ex officio* of the three last Committees.

On motion of Dr. Bemiss the three following resolutions were adopted:

[No. 28.]

Resolved, That the President instruct Drs. Cochran and Mitchell to report to the Joint Congressional Committee in session in Memphis, and offer their services in aid of the objects of said Committee in collecting information.

[No. 29.]

Resolved, That Drs. Cochran and Bemiss be appointed a Committee empowered to divide the work in the field by experts prior to January 15th.

[No. 30.]

Resolved, That the part of the resolution which was previously adopted [see No. 18], requiring the Chairmen of Committees to proceed immediately to New Orleans, should, by instruction of the President, not apply to Dr. Cochran until his duties in Memphis, as above indicated, have been discharged.

The Board of Experts then, at 10 o'clock, P. M., adjourned to Saturday evening at the call of the President.

PEABODY HOTEL, (Room No. 3), MEMPHIS, Tenn., }
 Saturday, Dec. 28th, 1878. }

The Board of Experts met at 10, A. M. Eleven members present, Col. Hardee absent. The President reported his interview with the Joint Congressional Sub-Committees, as follows:

The President said: I have had an interview, this morning, with the Congressional Sub-Committees, and laid before them the resolutions adopted by the Board, to which they gave their verbal approval with certain modifications which I will name. With the concurrence of the Congressional Sub-Committees on Epidemic Diseases, now in session in New Orleans, they approve of the employment of a draughtsman, to assist Col. Hardee, at a compensation not to exceed the rate of \$100 per month; and they suggest that the New Orleans Committees may be able to spare their stenographer and clerk to assist the Board for a portion of the time, and if not they will approve of the employment of not more than two clerks at the rate of \$75 per month for each, with the concurrence of the Sub-Committees in session in New Orleans.

The President stated that the Congressional Committees for Memphis desire an additional expert assigned to duty for a few days, in connection with Drs. Cochran and Mitchell, whereupon the Board at once resolved that Dr. Mosher be so assigned. The President also reported that the Congressional Committees had approved the following:

[No. 31.]

"*Resolved*, That when the Board of Experts adjourns, it do adjourn to meet at the office of the President of the Board in Washington City (1421 G street), on the 15th of January next, at ten o'clock, A. M., and that after adjournment the members of the Board shall enter immediately upon the work assigned to them."

Whereupon the said resolution was adopted by the Board.

[No. 32.]

The following is the order of assignment to duty of Experts in field service, as reported by Dr. Bemiss, Chairman of the Committee on said subject.

Lower Coast Group.—Morgan City, Berwick's Bay, Pilot Town, Cat Island, Canton, Lafourche Region, Teche Country.

Drs. Bemiss, Green and Chaillé.

Gulf Coast Group.—Pearlington, Bay St. Louis, Pass Christian, Mississippi City, Biloxi, Ocean Springs, Pascagoula, Covington, Mandeville.

Dr. Falligant.

Inland Group.—Hernaneo, Senatobia, Sardis, Moscow, Pollierville, Erin, Paris.

Drs. Cochran, Swearingen and Randle.

Mississippi River Group.—Greenville, Friars Point, Vicksburg, Delhi, Bolton, Dry Grove, Rankin, Milliken's Bend, Jackson.

Drs. Craft and Mosher.

To Memphis and Neighboring Places.—Dr. Mitchell.

Dr. Woodworth thanked the members of the Board for the courtesy and patience given him, and for their assiduous attention to duty, and for the harmony in its discharge.

On motion of Dr. Bemiss,

Resolved, That this Board extends its hearty thanks to the President for his courtesy and efficiency in the discharge of his duties.

The Board, then, at 11, A. M., adjourned to meet in Washington, on January 15th, 1879.

STANFORD E. CHAILLÉ,

Secretary.

JOHN M. WOODWORTH,

President Ex-officio.



IN THE SENATE OF THE UNITED STATES.

DECEMBER 2, 1878.—Ordered to be printed.

Mr. EUSTIS submitted the following

RESOLUTION:

Resolved by the Senate (the House of Representatives concurring), That a joint committee, to be composed of five members of the Senate and five members of the House of Representatives, be appointed by the President of the Senate and the Speaker of the House of Representatives, whose duty it shall be to inquire into the causes and circumstances of the late yellow-fever epidemic, and to report what legislation, if any, should be enacted by Congress to prevent a recurrence of the same; and that said joint committee be authorized to send for persons and papers and employ stenographers.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 2, 1878.—Ordered to be printed.

Mr. LAMAR submitted the following

RESOLUTION:

Resolved by the Senate (the House of Representatives concurring), That a commission is hereby authorized and constituted, to consist of three Senators, to be appointed by the Senate; three members of the House of Representatives, to be appointed by the Speaker; and experts, not exceeding seven in number, to be selected by and associated with them, with authority to determine the time and place of meeting, to employ stenographers and clerks, and to take testimony, whose duty it shall be to inquire into the history and the means of prevention and arrest of yellow fever, and to report the facts and their opinions and recommendations at any time.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 2, 1878.—Ordered to be printed.

Mr. HARRIS submitted the following

RESOLUTION:

Whereas the epidemic which has recently prevailed in large districts of several of the States of the Union has been so destructive to human life and the interests and prosperity of the whole country as to make it a subject of gravest public concern, and its prevention in future an important duty, to the end that its return may be prevented, so far as prompt and decided action can prevent,

Be it resolved by the Senate (the House of Representatives concurring), That a joint select committee of four Senators, to be appointed by the President of the Senate, and five Representatives, to be appointed by the Speaker of the House, be appointed to investigate and report the best means of preventing the introduction and spread of epidemic diseases, especially yellow fever and cholera, within the limits of the United States; that said committee be allowed a clerk and, if in the course of its investigations it is found necessary, a stenographer; and that said committee have power to send for persons and papers, to employ experts and scientists, not to exceed seven in number, and send them to, and by subcommittee visit, recently infected localities, for the purpose of obtaining the fullest and most accurate information; and that said committee may report at any time during the present session of Congress by bill or otherwise.

